Previously Presented Claims	Currently Amended Claims	Support in the Specification
11. An ordered array of immobilized oligonucleotides in the array's x and y coordinates with multiple copies of an unique sequence of interest extending in the array's z dimension,	11. An ordered array of a plurality of immobilized oligonucleotides in the ordered array's x and y coordinates [[with]]	The present invention contemplates an **array of nucleic acid sequences,** comprising a solid support having at least one surface; and **a plurality of nucleic acid sequences attached to said surface** of said solid support, … [page 12, lines 23-25]
wherein each copy has an identical generic oligonucleotide that is attached to the array's x and y coordinates and	wherein each of the plurality of immobilized oligonucleotides comprise two or more ~~multiple~~ copies of an unique sequence of interest extending in the array's z dimension, and wherein each of the plurality of immobilized oligonucleotides [[copy]] also has ~~an identical~~ a same generic oligonucleotide sequence that attaches the plurality of immobilized oligonucleotides to the x and y coordinates of a solid surface ~~that is attached to the array's x and y coordinates~~ and	…At **each position** (e.g., x1, y1; x1, y2; etc.), **a oligonucleotide is immobilized**. In one embodiment (see FIG. 1A), **the same oligonucleotide (i.e.,** an oligonucleotide with the **same generic nucleotide sequence**) is **immobilized in every position** (or nearly every position, with some positions left empty or for controls) on the solid support… [page 10, lines 11-15]

wherein each copy also carries the unique sequence of interest repeated at least two times in the z dimension of the array and wherein between each of the unique sequence of interest there is at least one region that is complementary to at least a portion of the identical generic oligonucleotide attached to the array's x and y coordinates produced by:	wherein each of the plurality of immobilized oligonucleotides has between the two or more copies of the unique sequence of interest [[copy]] ~~also carries the unique sequence of interest repeated at least two times in the z dimension of the array and wherein between each of the unique sequence of interest there is~~ at least one nucleic acid region that is complementary to at least a portion of the ~~identical~~ same generic oligonucleotide sequence ~~attached to the array's x and y coordinates~~ produced by:	Each circular DNA template is added … to create a **unique extended nucleic acid strand at each position on the solid support**, such extended strands **comprising two or more** (and more typically three or more, and more preferably, ten or more, and still more preferably more than fifty) **copies of the sequence of interest**. Thereby, an array is created with redundancy in the z dimension (i.e., out of the x and y plane of the solid support). [page 10, lines 28-29; page 11, lines 1-6] The invention contemplates that such **regions that separate each** copy of the **sequence of interest** can be additional regions that **can hybridize to the generic immobilized oligonucleotide** (e.g. the WWWW of FIG. 1A could be replaced with yet another region defined by

		AAAACC). [page 11, lines 15-18]
(a) providing: i) a solid support comprising a plurality of positions for oligonucleotides, said positions defined by x and y coordinates;	(a) providing: i) a solid support comprising a plurality of positions for oligonucleotides, said positions defined by x and y coordinates;	The present invention contemplates a method of generating an array, comprising **providing a solid support comprising a plurality of positions for oligonucleotides, the positions defined by x and y coordinates;** [page 19, lines 9-11]
ii) a plurality of identical generic oligonucleotides, each oligonucleotide comprising a sequence, wherein said oligonucleotide comprises a 5' end which is attached to the solid support and a 3'end;	ii) a plurality of same ~~identical~~ generic oligonucleotides, each oligonucleotide comprising a same sequence, wherein said plurality of same generic oligonucleotides comprise a 5' end which is attached to the solid support and a 3' end extending to the z dimension;	**a plurality of identical oligonucleotides,** each oligonucleotide comprising a sequence; [page 19, lines 11-12] In one embodiment (see FIG. 1A), the same oligonucleotide (i.e., an **oligonucleotide with the same generic nucleotide sequence**) is immobilized in every position (or nearly every position, with some positions left empty or for controls) on the solid support. [page 10, lines 12-15] Thereby, an **array** is created **with**

		redundancy in the z dimension (i.e., out of the x and y plane of the solid support). [page 11, lines 5-6]
and iii) a plurality of unique circular DNA templates, each circular DNA template comprising an unique sequence of interest and a region complementary to at least a portion of said sequence of said oligonucleotide, said unique sequence of interest being different for each circular DNA template;	and iii) a plurality of unique circular DNA templates, each circular DNA template comprising an unique sequence of interest and a nucleic acid region that is complementary to at least a portion [[of]] in said same sequence of said plurality of same generic oligonucleotides, wherein said unique sequence of interest ~~being~~ is different for each circular DNA template;	**plurality of unique circular DNA templates, each circular DNA template comprising a sequence of interest and a region complementary to at least a portion of the sequence** of the **oligonucleotides,** the **sequence of interest being different for each circular template**; [page 19, lines 12-15]
(b) immobilizing one oligonucleotide from said plurality of identical oligonucleotides in each of said positions on said solid support to create an ordered array comprising a plurality of identical immobilized oligonucleotides, each of which is described by its position defined by its x and y coordinates;	(b) immobilizing one oligonucleotide from said plurality of ~~identical~~ same generic oligonucleotides in each of said positions defined by x and y coordinates on said solid support to create an ordered array comprising a plurality of ~~identical~~ immobilized same generic oligonucleotides at every x and y	**immobilizing one oligonucleotide from the plurality of identical oligonucleotides in each of the positions on the solid support to create an ordered array comprising a plurality of identical immobilized oligonucleotides**; [page 19, lines 16-18]

	coordinate on the solid surface~~, each of which is described by its position defined by its x and y coordinates~~;	
(c) adding to each immobilized oligonucleotide of said ordered array a circular DNA template from said plurality of said unique circular DNA templates comprising the unique sequence of interest under conditions such that each immobilized oligonucleotide hybridizes to the circular DNA template to create a plurality of circular templates hybridized to immobilized oligonucleotides at positions defined by their x and y coordinates, each circular template comprising a different unique sequence of interest; and	(c) adding to each immobilized same generic oligonucleotide of said ordered array one of the [[a]] unique circular DNA templates ~~from said plurality of said circular DNA template comprising the unique sequence of interest~~ under conditions such that each of the immobilized same generic oligonucleotides hybridizes to one of the unique circular DNA templates to create a plurality of circular templates each hybridized to one of the immobilized same generic oligonucleotides at positions defined by their x and y coordinates, ~~each circular template comprising a different unique sequence of interest~~; and	**adding to each immobilized oligonucleotide of the ordered array a circular DNA template from the plurality of the unique circular DNA templates under conditions such that the immobilized oligonucleotide hybridizes to the circular DNA template to create a plurality of primed circular templates, each primed circular template comprising a different sequence of interest;** [page 19, lines 18-23]

(d) extending each of said hybridized immobilized oligonucleotides using a polymerase to create an ordered array of extended immobilized oligonucleotides, wherein each extended immobilized oligonucleotide has a position on the array defined by its x and y coordinates, and is extended in the z dimension, a growing strand, such that each extended immobilized oligonucleotide comprises at least two copies of said unique sequence of interest extending in the z dimension by the circular DNA template having the unique sequence of interest, wherein said unique sequence of interest has a different sequence corresponding to an unique portion of a target sequence, whereby the end of the sequence extending in the z-dimension of each extended immobilized oligonucleotide is unique corresponds to the unique portion of the target.	(d) extending each of said plurality of circular templates hybridized to the immobilized same generic oligonucleotides using a polymerase to create an ordered array of extended immobilized oligonucleotides, wherein each extended immobilized oligonucleotide has a position on the array defined by its x and y coordinates, and is extended in the z dimension, ~~a growing strand,~~ such that each extended immobilized oligonucleotide comprises ~~at least~~ two or more copies of said unique sequence of interest extending in the array's z dimension and wherein each of the plurality of immobilized oligonucleotides also has a same generic oligonucleotide sequence at the 5' end that attaches the plurality of extended immobilized oligonucleotides to the x and y coordinates of the solid surface and	and **extending each** of the primed **circular templates to create** an **extended immobilized oligonucleotide comprising at least two copies of the sequence of interest**, thereby **generating an ordered redundant array**. [page 19, lines 23-25] Each **circular DNA template** is added under conditions such that the circular DNA template **hybridizes with** the generic **immobilized oligonucleotide**, said **immobilized oligonucleotide** thereafter being **extended by a polymerase to create a unique extended nucleic acid strand** at each position on the solid support, such extended strands **comprising two or more** (and more typically three or more, and morc preferably, ten or more, and still more preferably more than fifty) **copies of the sequence of interest**. [page 10, lines 28-29 and page 11, lines 1-5]

	wherein each of the of the plurality of immobilized oligonucleotides has between the two or more copies of the unique sequence of interest [[copy]] also carries the unique sequence of interest repeated at least two times in the z dimension of the array and wherein between each of the unique sequence of interest there is at least one nucleic acid region that is complementary to at least a portion of the identical same generic oligonucleotide sequence ~~by the circular DNA template having the unique sequence of interest, wherein said unique sequence of interest has a different sequence corresponding to an unique portion of a target sequence, whereby the end of the sequence extending in the z-dimension of each extended immobilized oligonucleotide is unique~~.	
23. An ordered array of immobilized	An ordered array [[of]] with a plurality of	The present invention contemplates an

oligonucleotides in the array's x and y coordinates with multiple copies of a sequence of interest extending in the array's z dimension,	immobilized oligonucleotides attached to [[in]] the ordered array's x and y coordinates [[with]] the immobilized oligonucleotides comprising two or more ~~multiple~~ copies of a sequence of interest extending in the array's z dimension,	**array of nucleic acid sequences,** comprising a solid support having at least one surface; and **a plurality of nucleic acid sequences attached to said surface** of said solid support, … [page 12, lines 23-25]
wherein each copy has a different unique sequence attached to the array's x and y coordinates, each different sequence being complementary to the sequence of interest, wherein at least two copies of the different unique sequence are repeated along the z dimension of the array produced by:	wherein each immobilized oligonucleotide [[copy]] has a different ~~unique~~ sequence attached to the array's x and y coordinates, and wherein each of the different sequences attached to the array's x and y coordinates is [[being]] complementary to the sequence of interest, and wherein ~~at least~~ two or more copies of the different ~~unique~~ sequence of interest are repeated along the z dimension of the array produced by:	In this case, **each immobilized oligonucleotide comprises a region comprising a different sequence …, each different sequence being complementary to a sequence of interest**… to create a **unique extended nucleic acid strand** at each position on the solid support, such extended strands **comprising two or more** (and more typically three or more, and more preferably, ten or more, and still more preferably more than fifty) **copies of the sequence of interest**. Thereby, an **array** is created with **redundancy in the z dimension** (i.e., out of the x and y plane of

		the solid support). [page 11, lines 20-21, 22-23, page 12, lines 4-8]
a) providing: i) a solid support comprising a plurality of positions for oligonucleotides, said positions defined by x and y coordinates;	a) providing: i) a solid support comprising a plurality of positions for oligonucleotides, said positions defined by x and y coordinates;	In another embodiment of the present invention, a method of generating an array capable of hybridizing to fragments of a target nucleic acid is contemplated, comprising **providing a solid support comprising positions for oligonucleotides, the positions defined by x and y coordinates**; [page 20, lines 20-23]
and ii) a plurality of pairs of corresponding oligonucleotides and circular DNA templates, wherein each circular DNA template comprises a sequence of interest, and at least two of said sequence of interest are different, and the corresponding oligonucleotide for each circular DNA template comprises a sequence, wherein said oligonucleotide comprises a 5' end which is attached to the solid support and a	and ii) a plurality of oligonucleotides each having a different sequence that is complementary to an unique target sequence of interest; and iii) a plurality of unique circular DNA templates, each circular template comprising the unique target sequence of interest and a second nucleic acid region; ~~pairs of corresponding oligonucleotides and circular DNA templates, wherein each~~	**a plurality of oligonucleotides, each oligonucleotide comprising a sequence complementary to a different portion of the sequence of the target nucleic acid; and a plurality of corresponding circular DNA templates, each circular DNA template comprising a different portion of the sequence of the target;** [page 20, lines 23-27] The **circular DNA template comprises** i)

3' end, and further wherein said oligonucleotide comprises a sequence complementary to a portion of the sequence of interest on the corresponding circular DNA template;	~~circular DNA template comprises a sequence of interest, and at least two of said sequence of interest are different, and the corresponding oligonucleotide for each circular DNA template comprises a sequence, wherein said oligonucleotide comprises a 5' end which is attached to the solid support and a 3' end, and further wherein said oligonucleotide comprises a sequence complementary to a portion of the sequence of interest on the corresponding circular DNA template~~;	a first region comprising a **sequence of interest** (shown in FIG. 1B as ACGATAAAACC) and ii) **a second region** (shown in FIG. 1B as QQQQetc.) is employed. Because each immobilized oligonucleotide is unique, the region having a sequence complementary to at least a portion of the circular template permits hybridization only to the "corresponding" circular template; thus, the **region permitting hybridization on the circular template is also the sequence of interest** (FIG. 1B is merely illustrative and is not meant to limit the sequence or length of the sequence of this hybridizing region; indeed, regions larger than thirteen nucleotides are preferred) [page 11, lines 23-30, page 12, lines 1-2]
b) immobilizing one oligonucleotide in each of said positions on said solid support to create an ordered array comprising a	b) immobilizing one oligonucleotide <u>from said plurality of oligonucleotides</u> in each of said positions <u>defined by x and y</u>	**immobilizing each** of the **oligonucleotides in one of the positions on the solid support to create an ordered**

plurality of immobilized oligonucleotides, each of which is described by its position defined by its x and y coordinates	coordinates on said solid support to create an ordered array comprising a plurality of immobilized oligonucleotides~~, each of which is described by its position defined by its x and y coordinates~~;	**array comprising a plurality of immobilized oligonucleotides;** [page 20, lines 27-29]
c) adding to each immobilized oligonucleotide of said ordered array a corresponding circular DNA template under conditions such that said immobilized oligonucleotide hybridizes to said corresponding circular DNA template to create a plurality of circular templates each of which is hybridized to its corresponding immobilized oligonucleotide at a position defined by its x and y coordinates; and	c) adding to each of the immobilized oligonucleotides of said ordered array [[a]] the ~~corresponding~~ unique circular DNA template that is complementary to the immobilized oligonucleotide under conditions such that said immobilized oligonucleotide hybridizes to said ~~corresponding~~ circular DNA template to create an array with plurality of circular templates each of which is hybridized to its corresponding immobilized oligonucleotide at a position defined by its x and y coordinates; and	adding to each immobilized oligonucleotide of the ordered array a corresponding circular DNA template under conditions such that the immobilized oligonucleotide hybridizes to the corresponding circular DNA template to create a plurality of primed circular templates; [page 20, lines 29-30, page 21, lines 1-2]
d) extending said hybridized immobilized oligonucleotides using a polymerase to create an ordered array of extended	d) extending said hybridized immobilized oligonucleotides using a polymerase to create an ordered array of extended	**extending** the primed **circular templates to create an ordered redundant array of extended immobilized oligonucleotides**,

immobilized oligonucleotides, wherein each extended immobilized oligonucleotide has a position on the array defined by its x and y coordinates, and is extended in the z dimension such that each extended immobilized oligonucleotide comprises at least two copies extending at the terminus in the direction of the z dimension, a growing strand, of the sequence of interest contained in said hybridized circular template by a circular DNA template having an unique sequence of interest, wherein said unique sequence of interest has a different sequence corresponding to an unique portion of a target sequence, whereby the 3' terminus extending in the direction of the z-dimension of each extended immobilized oligonucleotide corresponds to the unique portion of the target.	immobilized oligonucleotides, wherein each extended immobilized oligonucleotide has a position on the array defined by its x and y coordinates, and is extended in the z dimension such that each extended immobilized oligonucleotide comprises ~~at least~~ two or more copies of the unique sequence of interest extending ~~at the terminus~~ in ~~the direction of the~~ z dimension~~, a growing strand, of the sequence of interest contained in said hybridized circular template by a circular DNA template having an unique sequence of interest~~, wherein said unique sequence of interest has a different sequence corresponding to an unique portion of a target sequence, ~~whereby the 3' terminus extending in the direction of the z-dimension of each extended immobilized oligonucleotide corresponds to the unique portion of the~~	each **extended immobilized oligonucleotide comprising at least two copies of the portion of the sequence of the target nucleic acid.** [page 21, lines 2-5] Each circular DNA template is added under conditions such that the **circular DNA template hybridizes and thereafter the oligonucleotide** is **extended by a polymerase** to **create a unique extended nucleic acid strand at each position on the solid support**, such **extended strands comprising two or more** (and more typically three or more, and more preferably, ten or more, and still more preferably more than fifty) **copies of the sequence of interest**. Thereby, an array is created with **redundancy in the z dimension** (i.e., out of the x and y plane of the solid support). [page 12, lines 2-8]

	~~target~~.	